THE TRANSITION FROM LEGACY CODES TO J-MASS
- SUGGESTED APPROACH -

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A Common Vision

- **DEVELOP, FIELD AND MAINTAIN COST-EFFECTIVE MODELING AND SIMULATION TOOLS TO MEET THE ELECTRONIC COMBAT NEEDS OF DoD AND...*MY ORGANIZATION.***

  - **Address Constructive M&S for EC Applications**
  - **Involve the Analyst in Design of Analytic Tools**

An Alternative **Strategy**

- **Leverage Available MSIC Threat Objects with other Ada or C++ objects in J-MASS architecture**

- **Transform some capability from Legacy to Object Code if required -- Chaff / Blue Aircraft / C3 Objects?**

- **Work Out a Deployment and Transition Scheme that:**
  - **Builds on Experience**
  - **Supports On-going Analysis**
  - **Delivers New Capability to Meet Requirements**

- **Agree on a V&V plan--incorporate MSIC, SIMVAL, SMART**

- **Provide OSD Leadership with Problem-solving Expertise**

Projects

- **Deliver architecture, aircraft, jamming systems and threat representations in object code**

- **Translate some legacy coded threat representations into object language if needed to meet schedule**

- **Upgrade environment object to support ECM analyses**
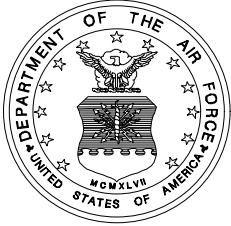
- **Build an M&S Strategic Plan for OSD**

Projects

- **"Hook" together objects. Start with "basic set"**
  - **At least one threat missile representation**
  - **Generic aircraft object**
  - **Generic ECM jammer object**
  - **Environment object**
  - **ASC/ENA EC Analyst Workstation**
  - **Compliance with J-MASS v3.0**

Projects

- **Deliver J-MASS "basic set" to Current Analysts under the Control of Established Configuration Management**
  - **Build on SMART Project Configuration Management Study**

- **Continue to Manage Integration of Objects in Parallel with Legacy Model Support**
  - **Shift Gradually toward Object Code with Capability to Complete Analysis, VV&A**

AFSAA / AFIWC Project

- Request delivery of objects from developers
- Integrate, "validate" and deliver initial player objects in parallel with ESAMS (Fall Release Cycle)
  - » Provide analytic capability with Tier 1 threats with concurrent with release of ESAMS
  - » Air-to-air threats, perhaps other representations from simulations other than ESAMS (AETAW)
  - » Prioritize and continue with other threat systems
- Build joint service confidence in J-MASS, transition support efforts
  - » Grandfather support of Legacy Models

Advantages

- **Effort "seeded" with $100K JMSIP funding.**
  - **May be leveraged to exceed $1M next year**
- **Meets continuing analytic needs of users**
- **Uses established Configuration Control Board / Process**
- **Provides for updates to best available threat data**
- **Tied to needs of big programs**
  - **Test & Evaluation (B-1B DSUP)**
  - **Joint Strike Fighter**
  - **Other services' requirements**

More Advantages

- **Pulls in capabilities identified by EDSWG**
- **Leverage JTCG/AS**
  - **SAM Threats Committee**
- **Verify and Validate**
  - **Trace progress from ESAMS 2.6.2 ASP to new versions**
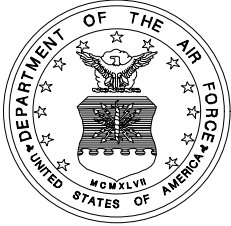- **Existing model and all changes documented**
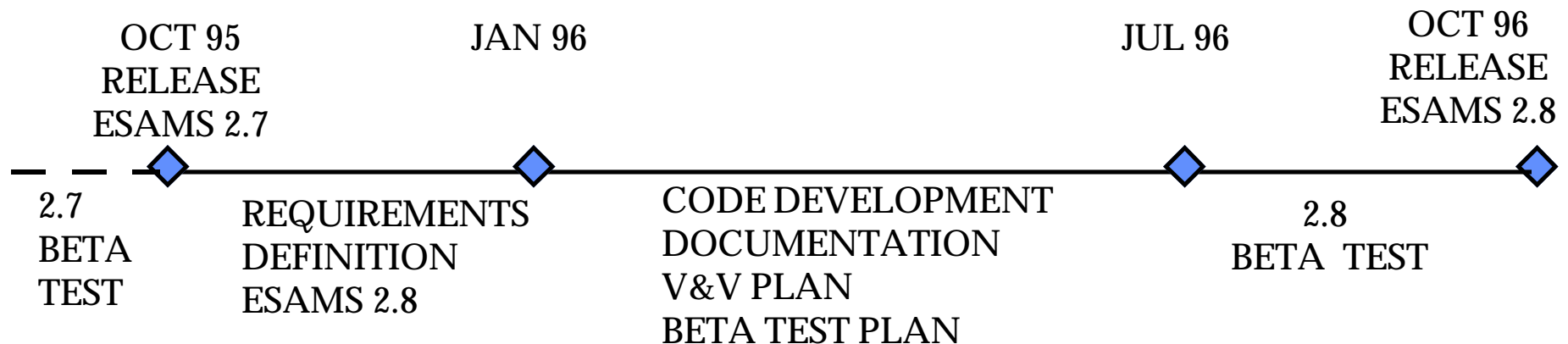
Disadvantages

- **Risk**
  - **J-MASS is success-challenged**
- **Inertia**
  - **Analysts are comfortable with their legacy codes**
- **J-MASS Perceived as Air Force initiative**
  - **Poor reputation, particularly among Navy analysts**

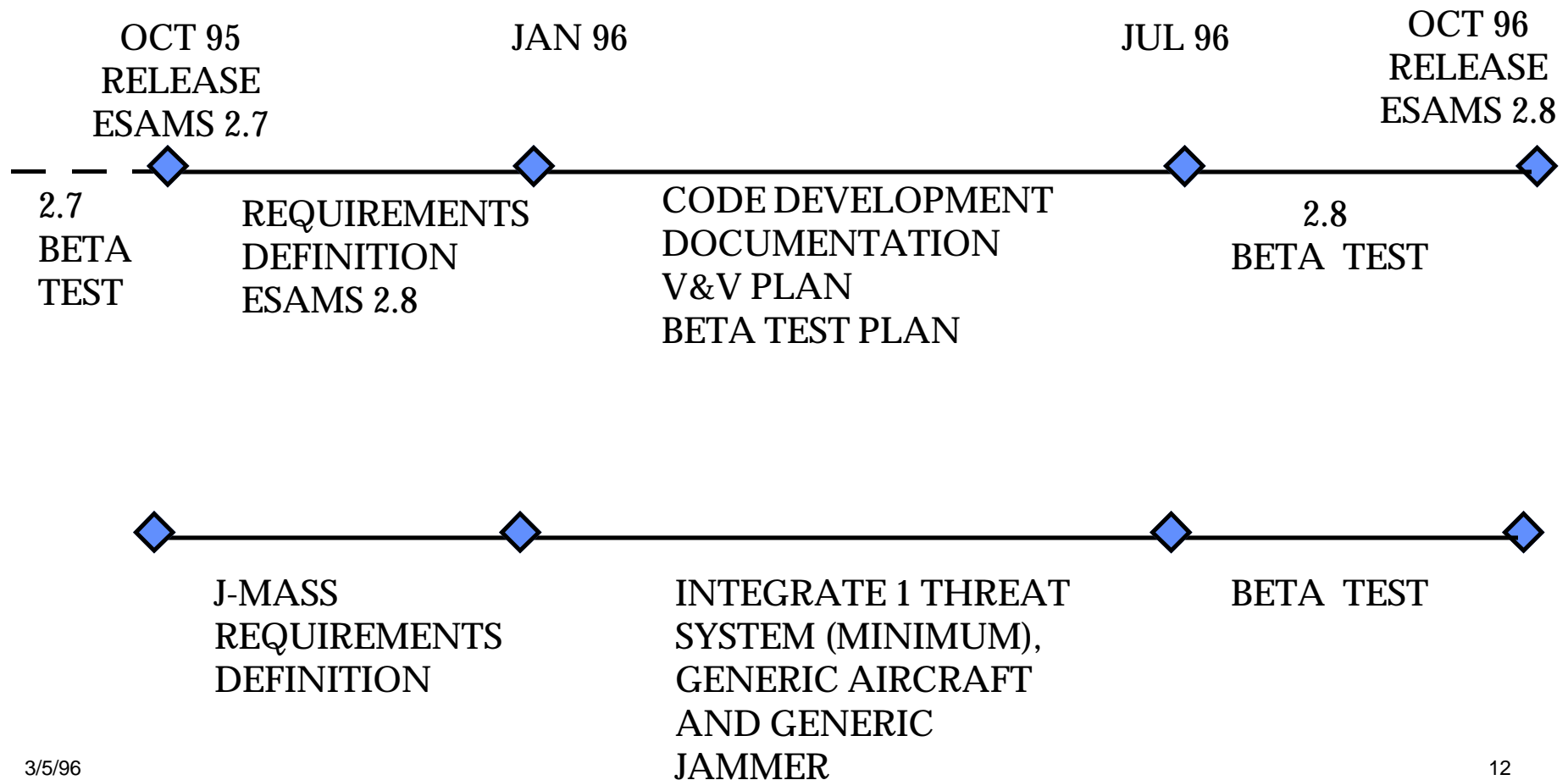# ESAMS Configuration Management Development Plan

OCT 95
RELEASE
ESAMS 2.7

JAN 96

JUL 96

OCT 96
RELEASE
ESAMS 2.8

2.7
BETA
TEST

REQUIREMENTS
DEFINITION
ESAMS 2.8

CODE DEVELOPMENT
DOCUMENTATION
V&V PLAN
BETA TEST PLAN

2.8
BETA TEST

Adding O-O Development

OCT 95
RELEASE
ESAMS 2.7

JAN 96

JUL 96

OCT 96
RELEASE
ESAMS 2.8

2.7
BETA
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CODE DEVELOPMENT
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BETA TEST PLAN

2.8
BETA TEST

J-MASS
REQUIREMENTS
DEFINITION

INTEGRATE 1 THREAT
SYSTEM (MINIMUM),
GENERIC AIRCRAFT
AND GENERIC
JAMMER

BETA TEST

Conclusions

- **This project may be implemented in the context of established configuration management procedures and schedules**

- **Joint service buy-in through ESAMS Users Group / Configuration Control Board and JTCG/AS network**

- **Allows controlled transition from current legacy simulations to object-oriented architecture**

- **Users get "exposed" to J-MASS**

- **Process is underway**

Briefing Trail

- **AFSAA/CC**
- **AF/XOM**
- **OUSD(A&T)DTSE&E**
- **AFOTEC/CC/CN**
- **AFIWC/SA**
- **AF/TE**
- **JTCG/AS (14 Feb 96)**
- **ASC/XR (26 Feb 96)**

- **ESAMS CCB/Users' Group**
- **EW T&E M&S Technical Review Board**
- **Director, SURVIAC**
- **ASC/XREM**
- **MSIC**
- **SMART Senior Steering Group**